



DRAINAGE FITTINGS FIELD SECTION 614

614.11 Scope. To establish procedures for the inspection and reporting of grates and bearing plates.

614.12 Apparatus.

- (a) Rule with suitable graduations to accurately measure the material to be inspected.
- (b) Magnetic gauge, reading range of 0-40 mils [0-1000 μm].
- (c) Scales accurate to within 0.5 percent of the weight [mass] of the sample to be weighed.

614.13 Procedure. Acceptance of grates and bearing plates shall be based on field inspection of dimensions and weights; determination of weight of zinc coating, if galvanized; and fabricator's certification.

614.13.1 Dimensions and weights [masses] are to be determined for compliance to Standard Drawing 614.10. Poor workmanship and misalignment of bars may cause dimensions to be unacceptable. The grates and bearing plates should be weighed to the nearest 1 lb [500 g] for the purpose of applying the minus 5 percent allowed tolerance. However, the weights [masses] are to be reported to the nearest 10 lbs [5 kg].

614.13.2 Before galvanizing, the grates and bearing plates should be thoroughly cleaned, particularly in the interior corners and in weld areas. Field determination of weight [mass] of coating, by magnetic gauge, is to be made on each lot of material furnished. The magnetic gauge is to be operated and calibrated in accordance with ASTM E376. At least three specimens per 100 pieces in a lot are to be selected for field determination of weight [mass] of coating. A single-spot test is to be comprised of at least five readings of the magnetic gauge taken in a small area and those five readings averaged to obtain a single-spot test result. Three such areas shall be tested on each specimen being tested. Test each specimen in the same manner. Average all single-spot test results from all specimens to obtain the average coating weight [mass] to be reported. The reported minimum test result would be the lowest average obtained on any one specimen. Material may be accepted or rejected for galvanized coating on the basis of magnetic gauge. If a test result fails to comply with specifications, that lot should be resampled at double the original sampling rate. If any of the resample specimens fail to comply with the specification requirements, that lot is to be rejected. The contractor or supplier is to be given the option of sampling for Laboratory testing, if the magnetic gauge test results are within minus 15 percent of the specified coating weight [mass].

614.13.3 Weight [mass] of galvanized coatings on bolts and nuts is to be determined in the same manner as described in paragraph 614.13.2 of this Section except five readings in a small area is sufficient for each specimen.

614.13.4 The fabricator is to furnish a certification stating that steel used in the fabrication of grates and bearing plates was manufactured to conform to AASHTO M183.

614.4 Report. Grates and bearing plates shall be reported through SiteManager. A copy of the fabricator's certifications for the steel is to be retained in the district office. The report is to indicate acceptance, qualified



acceptance, or rejection. Appropriate remarks, as described in [General Sec 7.1.2](#) of this Manual, are to be included in the report to clarify conditions of acceptance or rejection.

Distribution of reports for materials purchased under a Department purchase order is to be as described in [Field Sec 2001](#) of this Manual.

Section 614.20 Automatic Floodgates.

614.21 Scope. To establish procedures for the inspection and reporting of automatic floodgates.

614.22 Procedure. Automatic floodgates are to be accepted on the basis of manufacturer's certification as required by Specification Sec 614.22.5 and an examination of the floodgate for material conformance to Specification Sec 614.20.

614.23 Report. Automatic floodgates are to be reported through SiteManager. The report is to indicate acceptance, qualified acceptance, or rejection. Appropriate remarks, as described in [General Sec 7.1.2](#) of this Manual, are to be included in the report to clarify conditions of acceptance or rejection.

Distribution of reports for materials purchased under a Department purchase order is to be as described in [Field Sec 2001](#) of this Manual.

614.30 Manhole Frame and Cover, and Curb Inlet.

614.31 Scope. To establish procedures for the inspection and reporting of manhole frames and covers, curb inlets, adjusting rings and items of a similar nature.

614.32 Apparatus.

- (a) Rule with suitable graduations to accurately measure the material to be inspected.
- (b) Scales accurate to within 0.5 percent of the weight [mass] of the sample to be weighed.

614.33 Procedure. Manhole frames and covers, adjusting rings, curb inlets, and similar items are to be accepted on the basis of manufacturer's certification and field determination of dimensions and workmanship. Manhole frames and covers are to be weighed only when deemed necessary to check the manufacturer's certification. If manhole frames and covers are presented for inspection from a new manufacturer at least one of the items shall be weighed and checked against the certification.

614.33.1 The manufacturer is to furnish a certification stating that the materials furnished conform to the requirements of the Specifications and that the items were constructed of cast iron meeting the requirements of AASHTO M 105. The class of cast iron is to be shown on the certification and in addition the typical weights [mass] of manhole frames and covers shall be shown.

614.33.2 The configuration and dimensions shall be examined for conformance to Standard Drawing 614.30 or 614.10. If manhole frames and covers are weighed, they shall be weighed and reported to the nearest 0.5 percent of the nominal weight [mass]. A weight [mass] tolerance of minus 5 percent is considered to be adequate for this type of item.



614.33.3 The finished item is to display quality workmanship. Manhole covers are to have a checkered design top.

614.34 Report. Manhole frames and covers, curb inlets, adjusting rings, etc., shall be reported through SiteManager. The report is to indicate acceptance, qualified acceptance, or rejection. Appropriate remarks, as described in [General Sec 7.1.2](#) of this Manual, are to be included in the report to clarify conditions of acceptance or rejection.

Distribution of reports for materials purchased under a Department purchase order is to be as described in [Field Sec 2001](#) of this Manual .

